

**CLASS 270, SHEET-MATERIAL ASSOCIATING****SECTION I - CLASS DEFINITION**

Method or apparatus for bringing in a logical array, a plurality of sheets, or webs of a flexible material in accordance with recognizable indicia thereon or other characteristics distinguishing one sheet or web from another.

- (1) Note. Included herein is a sheet or web material associating combined with printing, cutting, securing, wrapping, or merely opening folded sheets.
- (2) Note. For purpose of facilitating the definition of the subclasses, the following discussion and definition of terms used is presented. A "sheet" is a thin, usually flexible object having length and width dimensions. The boundary of these dimensions are the "edge" of the sheet. The sheet is moving along a direction of travel, and the term "side-edge" is applied to those edges which are generally parallel to the direction of travel. A "web" is a sheet having indefinite length and a definite width. The term "positioning" may include the act of partially turning the sheet about an axis that passes through the surface of the sheet so that an edge thereof is accurately aligned if that edge was previously misaligned.

**SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS**

The following line was established after a discussion with the examiners representing Classes 270 and 271:

In Class 270, the apparatus for the sheet-material associating includes a mechanism to place the sheets from plural sources into an operational specified association onto or against a surface which then groups the sheets in said specified association or to place the sheets in specified association. The delivery of the sheets to a stack from the plural sources requires a specific order of associating the sheets other than mere random stacking. Class 270 accepts putting the sheets in a logical array or placing the sheets in the associated stack in order to perform the operation on the sheets.

In Class 271, a separation of an individual sheet from a stack of sheets considered proper even if no specific

feeding of the sheets for an operation is disclosed. In Class 271, a sheet feeding or delivering means combines or places the sheets (a) adjacent to or on top of each other in a random order, or (b) to perform the operation on individually fed sheets.

**SECTION III - REFERENCES TO OTHER CLASSES****SEE OR SEARCH CLASS:**

- 399, Electrophotography, subclasses 16+ and 361+ for document handling (e.g., feeding or delivering sheet medium (i.e., originals or copies) within an electrophotos:graphic device).
- 493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, subclasses 405+ for folding a sheet or web.

**SUBCLASSES****1.01 With printing:**

This subclass is indented under the class definition. Subject matter comprising an apparatus for impressing or stenciling or imaging a design or character upon a plurality of sheets or webs of a flexible material which sheets or webs are brought together in a logical array in accordance with (a) recognizable indicia on the material, or (b) the characteristics distinguishing one sheet or web material from another.

- (1) Note. Inkjet or laser printing is included in this subclass.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 9, for printing on a longitudinally folded web including associating extra sheets.

**SEE OR SEARCH CLASS:**

- 355, Photocopy, subclass 311 for an electrophotos:graphic document counting of a feed stock having different sizes, colors or shapes and subclass 325 for delivering or collecting the electrophotos:graphic document including inserting a sheet between the two sheets.
- 399, Electrophotography, subclasses 79+ for an electrophotos:graphic docu-

ment counting of a feed stock having different sizes, colors, or shapes and subclass 361+ for delivering or collecting the electrophotos:graphic document including inserting a sheet between the two sheets.

**1.02 Personalized printing (e.g., name or address):**

This subclass is indented under subclass 1.01. Subject matter including printing the design or character made-to-order, such as printing individual names or addresses or other customized printing on selected sheets or webs.

**SEE OR SEARCH CLASS:**

283, Printed Matter, subclasses 63.1+ for a personalized book printing.  
493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, subclasses 324+ for printing on a container or tube made from a paper material.

**1.03 Responsive to information on sheets or webs:**

This subclass is indented under subclass 1.02. Subject matter including means for detecting instruction indicia placed on the sheets or webs and in response, thereto, interpreting and printing a design or character on the selected sheets or webs.

**4** Means for both associating and folding, together with a pair of rotatable members, between the peripheries of which the work is printed by rolling contact.

(1) Note. Also compare the printing class references below.

**SEE OR SEARCH CLASS:**

101, Printing, subclasses 216+.

**5.01 Longitudinal web folding:**

This subclass is indented under subclass 4. Subject matter wherein a flexible material in a strip form of indefinite length is being continuously bent over or doubled up upon itself along its length by passing the material over a former or the like.

**SEE OR SEARCH CLASS:**

226, Advancing Material of Indeterminate Length, subclasses 24+ for regulating a longitudinal movement of the web material.

**5.02 Cutting:**

This subclass is indented under subclass 5.01. Subject matter including a sharp-edged device or similar means for severing or penetrating the web.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

21.1, for cutting the folded sheets or webs which are printed with a rotary printer.  
52.17, for a signature cutting device.

**5.03 Slitting or perforating:**

This subclass is indented under subclass 5.02. Subject matter wherein the cutting device is (a) making a long narrow cut or incision in the web, or (b) piercing or punching a hole in the web.

**6** Having a cylinder for carrying a sheet around and associating it with a succeeding sheet from the same source, and also means for folding sheets.

**7** With means for associating extra sheets with the main product.

**8** Also having means for folding sheets.

**9** With means for associating extra sheets with the main product.

**10** The material being first associated in continuous strip form, then cut into sheets, there being a cylinder for carrying a sheet around and associating it with succeeding sheets from the same source.

**SEE OR SEARCH CLASS:**

226, Advancing Material of Indeterminate Length, appropriate subclasses for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.

- 11 With means for associating extra sheets with the main product.
- 12 The material at the time of association being in the form of short sections as distinguished from webs.
- 13 There being a cylinder for carrying a sheet around and associating it with a succeeding sheet from the same source.
- 14 With means for associating extra sheets with the main product.
- 15 With means for associating extra sheets with the main product.
- 16 Having means for folding sheets on a line parallel to their direction of travel through the printing mechanism.
- 17 With means for associating extra sheets with the main product.
- 18 Means for assembling a plurality of sheets or webs otherwise than by merely stacking, without folding, there being a pair of rotatable members, between the peripheries of which the work is printed by rolling contact.
- 19 There being a cylinder for carrying a sheet around and associating it with a succeeding sheet from the same source.
- 20.1 Folding, with rotary printer:**  
This subclass is indented under subclass 1.01. Method or apparatus including use of means for superimposing portions of the same piece of material without severing along the fold line, together with a pair of rotatable members, between the peripheries of which the work is printed by rolling contact.
- 21.1 Cutting:**  
This subclass is indented under subclass 20.1. Method or apparatus combined with means for severing the material transversely of its movement through the machine.
- 22.1 Bed and travelling cylinder, web, perfecting:**  
This subclass is indented under subclass 1.01. Method or apparatus wherein printed matter is impressed on both sides of a web by passing it through machines having a flat printing member in rolling action with a cylinder.
- (1) Note. Also compare the printing class references below.
- SEE OR SEARCH CLASS:  
101, Printing, subclasses 256+.
- 30.01 RECIPROCATING-CARRIAGE PILER:**  
This subclass is indented under the class definition. Subject matter including means arranged to travel to and fro in a straight path over a support or platform and to deposit layers of sheets or webs on the support or platform.
- (1) Note. The layers may or may not be severed from each other.
- SEE OR SEARCH CLASS:  
8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, subclass 152 for piling chemically modified textiles and fibres.  
68, Textiles: Fluid Treating Apparatus, subclasses 177+ for piling the fabrics in a web or rope form into a treating receptacle.  
100, Presses, subclasses 80+ for presses not classified elsewhere, having in addition a means to fold a sheet, web, or strand in a zigzag fashion.
- 30.02 With flaw detection in material or pattern marking:**  
This subclass is indented under subclass 30.01. Subject matter including means for detecting a defect in (a) a predetermined characteristic of the sheets or webs, or (b) a design or character printed on the sheets or webs.
- 30.03 With tension indicator or control:**  
This subclass is indented under subclass 30.01. Subject matter including means for (a) measuring a tautness or slackness in the sheets or webs and actuating an alarm or signal when the tautness or slackness in the sheets or webs is in excess of or below a pre-established limit, or (b) actuating a device to regulate the tautness or slackness in the sheets or webs for preventing wrinkles.

## SEE OR SEARCH CLASS:

101, Printing, Dig. 42 for a web tensioning device.

**30.04 With synchronized feeding:**

This subclass is indented under subclass 30.01. Subject matter wherein the traveling speed of the reciprocating carriage piler is coincided with the speed at which the sheets or webs are deposited on the support or platform.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

39.01+, for a zigzag packaging of the sheets or webs.

**30.05 With clamp:**

This subclass is indented under subclass 30.01. Subject matter including means for gripping the sheets or webs, thereby, restricting the movement of the sheets or webs with respect to the carriage or support or platform.

## SEE OR SEARCH CLASS:

269, Work Holders, subclasses 254+ for a spring or similar resilient means for gripping the material or work.

**30.06 Traveling supply:**

This subclass is indented under subclass 30.05. Subject matter wherein the carriage includes a device for carrying a bolt or package from which bolt or package the sheets or webs are supplied to the support or platform.

**30.07 With edge aligner:**

This subclass is indented under subclass 30.01. Subject matter including means for positioning or locating lateral edges of the sheets or webs with respect to the edges of the previously positioned sheets or webs or with respect to the support or platform.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

52.08, for a web edge aligning and registering.

58.12, for a sheet edge aligner associated with a binding operation.

## SEE OR SEARCH CLASS:

271, Sheet Feeding or Delivering, subclasses 226+ for a sheet aligning means associated with a sheet feeder.

**30.08 Cutting:**

This subclass is indented under subclass 30.01. Subject matter including a sharp-edged device or similar means for severing the sheets or webs and depositing in layers on the support or platform.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

5.02+, for cutting a longitudinally folded printed webs.

52.09, for cutting webs and assembling into individual stacks of sheets.

**30.09 Traveling supply:**

This subclass is indented under subclass 30.08. Subject matter wherein the sheets or webs are supplied from a bolt or package carried in a continuously moving device to the cutting device and deposited in layers on the support or platform.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

30.06, for a traveling supply of the sheets or webs carried on the carriage having a clamp.

**30.1 With height adjustment of support or carriage:**

This subclass is indented under subclass 30.01. Subject matter including means for permitting or causing a change in the vertical position of the support or platform or carriage.

**30.11 Traveling supply:**

This subclass is indented under subclass 30.01. Subject matter wherein the carriage includes a device for carrying a bolt or package from which bolt or package the sheets or webs are supplied to the support or platform.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

30.06, for a traveling supply of sheets or webs carried on the carriage having a clamp.

- 30.09, for the traveling supply of the sheets or webs carried on the carriage having a cutting means.
- 30.12 With speed control:**  
This subclass is indented under subclass 30.01. Subject matter including means for regulating the reciprocating travel of the carriage.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
30.13, for a carriage driving control.
- 30.13 With driving control:**  
This subclass is indented under subclass 30.01. Subject matter including means for changing the direction of travel of the carriage.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
30.12, for a carriage speed control.
- 32** Means for both associating and folding.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
4+, for associating and folding with rotary printer.
- 37** With means for securing the parts of the product together by means of staples, thread, or the like.
- (1) Note. Also compare the subclasses to the current class and the sewing class in the Search Notes below.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
53,
- SEE OR SEARCH CLASS:  
29, Metal Working, subclasses 432+ for a residual method of securing a nail or staple to work by driving, and see the note to Class 227, below for related means for so doing.  
112, Sewing, subclass 136, and indented subclasses.  
227, Elongated-Member-Driving Apparatus, subclasses 19+ and subclasses 99+ for combined apparatus for feeding work and applying a member, e.g., staple, to the work.
- 38** There being a cylinder for carrying a sheet around and associating it with a succeeding sheet from the same source.
- (1) Note. Compare this class, subclass 47.
- 39.01 Zigzag package:**  
This subclass is indented under subclass 32. Subject matter wherein the sheets or webs are folded in alternate opposite directions.
- SEE OR SEARCH CLASS:  
400, Typewriting Machines, subclasses 613.2+ for feeding a web record-medium with a web supply with fan-folded or creased web.  
493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, subclasses 410+ for folding and refolding of a web.
- 39.02 Including stack separating:**  
This subclass is indented under subclass 39.01. Subject matter wherein the zigzag package is cut or isolated into more than one independent pack of sheets or webs at a selected location.
- SEE OR SEARCH CLASS:  
493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, subclass 362 for advancing work from first to second operation station.
- 39.03 Web feed from below:**  
This subclass is indented under subclass 39.01. Subject matter wherein the webs in the zigzag package are supplied from the bottom of the zigzag package for further operation.
- 39.04 With sheet insertion:**  
This subclass is indented under subclass 39.01. Subject matter including means for introducing a sheet between the zigzag folds of the sheets or webs.
- 39.05 Zigzag web:**  
This subclass is indented under subclass 39.01. Subject matter wherein the webs are folded in alternate opposite directions.

- SEE OR SEARCH CLASS:  
493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, subclasses 413+ for a web folding by swinging a work guiding member.
- 39.06 Interfolding multiple sheets:**  
This subclass is indented under subclass 39.01. Subject matter including means for inserting one folded sheet into another folded sheet so as to lock both folded sheets with one another.
- SEE OR SEARCH CLASS:  
493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, subclasses 409+ for repeatedly folding and unfolding and subclass 450 for folding by a direct application of vacuum or fluid.
- 39.07 Associating before folding:**  
This subclass is indented under subclass 39.06. Subject matter wherein the sheets are brought together in a logical array in accordance with (a) recognizable indicia on the sheets, or (b) the characteristics distinguishing one sheet from another sheet; before the sheets are interfolded.
- 39.08 By blade:**  
This subclass is indented under subclass 39.06. Subject matter wherein the sheet inserting means includes a flat thin member made of metal or non-metal material.
- 39.09 By rotating drum with pocket member:**  
This subclass is indented under subclass 39.06. Subject matter wherein the sheets inserting means includes a member having a circumferential surface which turns about its axis in an arc of a circle; the said surface having a receptacle lying in or adjacent to the surface for temporarily holding successive sheets.
- SEE OR SEARCH CLASS:  
271, Sheet Feeding or Delivering, subclass 315 for a rotary sheet conveyor having pocket members located on its circumferential surface.
- 40** The material in strip form of indefinite length continuously folded by passage through a former.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
41+, for longitudinal folding of web material.
- 41** The material in strip form of indefinite length continuously folded by passage through a former.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
5.01+, and 40, for longitudinal folding of web material.
- SEE OR SEARCH CLASS:  
226, Advancing Material of Indeterminate Length, appropriate subclasses for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.
- 493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, subclasses 405+ for folding, per se, of sheet material generally.
- 42** There being a cylinder for carrying a sheet around and associating it with a succeeding sheet from the same source, also additional means for sheet folding.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
6+, for longitudinal web folding including cylinder collecting with sheet folding.
- 43** The material first associated in continuous strip form, then cut into sheets, there being a cylinder to carry the sheets around and associate them with succeeding sheets from the same source.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
10+, for associating and folding with a rotary printer including web association with cylinder collecting.

- SEE OR SEARCH CLASS:  
226, Advancing Material of Indeterminate Length, appropriate subclasses for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.
- 44** With means for associating extra sheets with the main product.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
11, for web association with cylinder collecting including additional-sheet associating having a rotary printer.
- 45** The material at the time of association being in the form of short sections as distinguished from webs.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
12+, for sheet associating and folding with a rotary printer.
- 46** With means for causing one sheet to pause until the arrival of another sheet, with which it is associated.
- 47** Having a cylinder for carrying a sheet around and associating it with succeeding sheet from the same source.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
13+, for sheet associating including cylinder collecting having a rotary printer.
- 48** With means for associating extra sheets with the main product.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
14, for sheet associating including cylinder collecting having a rotary printer.
- 49** The folding-blade pivotally mounted on a revolving carrier.
- 50** The folding-blade pivotally mounted on a revolving carrier.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
49, for sheet associating and folding including revolving pivotal blade for cylinder collecting.
- 51** With means for associating extra sheets with the main product.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
15, for sheet associating and folding with a rotary printer.
- 52.01 ASSOCIATING OR DISASSOCIATING:**  
This subclass is indented under the class definition. Subject matter wherein a plurality of sheets or webs are brought together or assembled into a pack in a logical array other than by merely stacking the sheets or webs or separated or disassembled the plurality of sheets or webs into separate packs other than merely unstacking the sheets or webs in accordance with (a) recognizable indicia on the sheets or webs, or (b) the characteristics distinguishing one sheet or web from another sheet or web in the pack.
- (1) Note. Folding of the sheets or webs is not included in this subclass.
- SEE OR SEARCH CLASS:  
156, Adhesive Bonding and Miscellaneous Chemical Manufacture, appropriate subclasses for a laminating means in combination with a means for assembling a plurality of sheets.  
226, Advancing Material of Indeterminate Length, appropriate subclasses for methods of, and an apparatus for, feeding a material without utilizing the leading or trailing ends to effect a movement of the material.  
242, Winding, Tensioning, or Guiding, appropriate subclasses for a similar device wherein at least one of the disassembled web is wound into a coil.
- 52.02 With control indicia (e.g., barcode):**  
This subclass is indented under subclass 52.01. Subject matter wherein the associating or disassociating is regulated by a sensor in response to detecting a systematic arrangement of recognizable or identifying marks such as lines,

numbers, or letters, or the like that are printed or placed on the sheets or webs.

**52.03 Personalized stacks:**

This subclass is indented under subclass 52.01. Subject matter wherein the sheets or webs in the packs are so arranged that at least one sheet or web in a pack is having a size or color or shape or characteristic or indicia different than other sheets or webs in the pack.

- (1) Note. All packs in the arrangement are identical in this subclass.

**52.04 With rejection control:**

This subclass is indented under subclass 52.01. Subject matter including means for detecting a damaged or missing or repetitive or unintended arrangement of packs and in response thereto (a) actuating a warning signal, or (b) activating a member for removing such packs.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

52.06, for a sensor detecting a stack which does not include all intended number of sheets or webs.

SEE OR SEARCH CLASS:

493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, subclass 16 for a sensor which detects and in response automatically actuates a member to remove such defective sheet or web.

**52.05 Reorder control:**

This subclass is indented under subclass 52.04. Subject matter including means for regulating a supply of new pack of sheets or webs to replace the rejected packs.

**52.06 With incomplete stack sensor:**

This subclass is indented under subclass 52.01. Subject matter including means for detecting more or less than a predetermined number of sheets or webs in the pack and in response thereto actuating a signal or warning device.

SEE OR SEARCH CLASS:

271, Sheet Feeding or Delivering, sub-classes 256+ for a means to interrupt a sheet feeding.

**52.07 Web associating:**

This subclass is indented under subclass 52.01. Subject matter wherein a plurality of materials in strip form having indefinite lengths are brought together or assembled into packs in a logical array other than by merely stacking the strip material, in accordance with (a) the recognizable indicia on the materials, or (b) the characteristics distinguishing one strip material in the pack from another.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

52.01+, for sheets or webs associating or dis-associating.

58.01+, for sheet associating.

58.33+, for sheet disassociating.

**52.08 Aligning or registering:**

This subclass is indented under subclass 52.07. Subject matter including a web associating mechanism and means for locating or positioning side edges of successively stacked webs or locating or positioning the associated webs with respect to a part of the web associating mechanism.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

30.07, for an edge aligner with reciprocating piler.

58.12, for a sheet edge aligner in a sheet binding operation.

SEE OR SEARCH CLASS:

271, Sheet Feeding or Delivering, sub-classes 226+ for a sheet alignment.

**52.09 Cutting web into stacked sheets:**

This subclass is indented under subclass 52.07. Subject matter wherein (a) the web is severed into individual sheets and assembled into orderly piles, or (b) the web is severed under individual sheets and assembled into the orderly piles.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

30.08+, for cutting webs or sheets material associated with a carriage piler.



## SEE OR SEARCH CLASS:

198, Conveyors: Power-Driven, subclass 444 for a sensing means to control an arrangement of a stream of items on a conveyor.

**52.1 Webs of different material (e.g., paper and carbon):**

This subclass is indented under subclass 52.07. Subject matter including at least two webs each having a distinct characteristic (e.g., one web is a plain paper and the other web is treated with a carbon compound).

**52.11 Web decollating:**

This subclass is indented under subclass 52.01. Subject matter including means for separating webs into individual webs or a group of webs without cutting.

**52.12 Web bursting:**

This subclass is indented under subclass 52.01. Subject matter including means such as a gripping roller or the like for holding or pulling the webs for breaking along perforations or weak planes.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

52.09, for cutting a web into sheets and assembling into a stack.

**52.13 Securing sheet onto web:**

This subclass is indented under subclass 52.01. Subject matter including means for placing and attaching the sheet onto the web.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

52.18, for a signature binding operation.

**52.14 Signature associating:**

This subclass is indented under subclass 52.01. Subject matter wherein a plurality of previously folded sheets or webs are brought together or assembled into the packs in a logical array other than by merely stacking the previously folded sheets or webs in accordance with (a) the recognizable indicia on the sheets or webs, or (b) the characteristics distinguishing one sheet or web from another in the pack.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

52.01+, for sheets or webs associating or dis-associating.

52.07+, for web associating.

58.01+, for sheet associating.

**52.15 Mis-feed signature sensor:**

This subclass is indented under subclass 52.14. Subject matter including means for detecting (a) the absence of the signature, or (b) more than one signature occupying a space at the same time, or (c) a mis-alignment of the signature or such improperly supplied signature; and in response thereto actuating a signal or warning device.

(1) Note. The sensor is located between the supply source and the support.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

58.03, for a misfeed sheet sensor.

**52.16 Gathering line:**

This subclass is indented under subclass 52.14. Subject matter wherein the signatures are carried in a continuously advancing straight line path.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

52.29, for a saddle gathering line.

58.29, for a sheet gathering line.

**52.17 Cutting:**

This subclass is indented under subclass 52.14. Subject matter including a sharp-edged device or similar means for severing the signatures.

## SEE OR SEARCH THIS CLASS, SUB-CLASS:

5.02+, for cutting individually folded printed webs.

21.1, for cutting folded sheets or webs which are printed with a rotary printer.

**52.18 Binding:**

This subclass is indented under subclass 52.14. Subject matter including means for securing in position two or more individual signatures together.

- (1) Note. The securing means for this subclass includes metallic rings or wire bands such as staples or threads.

**52.19 Insetting:**

This subclass is indented under subclass 52.14. Subject matter including means for inserting an additional sheet between the folded sides of the signatures.

- (1) Note. Folded edges of the signatures are placed downward for this subclass.
- (2) Note. The inseting means may include a roller or pusher or such device which drops the additional sheet between the open folded sides of the signature.

**52.2 Signature carrying hopper:**

This subclass is indented under subclass 52.19. Subject matter wherein the signatures, before or after inseting, are transported in a pocket-like container which is substantially shaped like a funnel.

**52.21 Roller signature feeder:**

This subclass is indented under subclass 52.19. Subject matter wherein the signatures are supplied from a source by a device having a rotating drum or such similar member turning on its axis in an arc of a circle.

**52.22 With signature in-feed conveyor:**

This subclass is indented under subclass 52.21. Subject matter wherein the signatures are transported to the feeder on a carrier having a continuously moving surface such as an endless belt made of a flexible material.

**52.23 Signature opener:**

This subclass is indented under subclass 52.19. Subject matter including means for engaging or pulling apart the folded sides of the signature.

**52.24 By suction:**

This subclass is indented under subclass 52.23. Subject matter wherein the signature opener includes an element having a surface through which surface a vacuum or subatmospheric pressure is applied to facilitate engaging and pulling one side of the signature toward the surface.

SEE OR SEARCH THIS CLASS, SUBCLASS:

52.28, for opening saddled signatures by suction means.

**52.25 By gripping:**

This subclass is indented under subclass 52.23. Subject matter wherein the signature opener includes at least two elements having opposed surfaces between which surfaces one side of the signature is placed and the elements are urged toward one another and one side of the signature is firmly grasped by the surfaces and pulled away with respect to the other side of the signature.

**52.26 Saddle associating:**

This subclass is indented under subclass 52.14. Subject matter wherein the signatures are so associated that edges formed by the folded sides of the signatures are directed upward and perpendicular to the direction of travel of the signatures.

SEE OR SEARCH THIS CLASS, SUBCLASS:

52.01+, for sheets or webs associating or disassociating.

52.07+, for web associating.

58.01+, for sheet associating.

**52.27 Saddle opener:**

This subclass is indented under subclass 52.26. Subject matter including means for engaging and pulling apart the folded sides of the signatures.

SEE OR SEARCH THIS CLASS, SUBCLASS:

52.23+, for a signature opener.

**52.28 By suction:**

This subclass is indented under subclass 52.27. Subject matter wherein the signature opener includes an element having a surface, through which surface a vacuum or subatmospheric pressure is applied to facilitate engaging and pulling one side of the signature toward the surface.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
52.24, for opening the signatures by suction means.
- 52.29 Gathering line:**  
This subclass is indented under subclass 52.26. Subject matter wherein the signatures are carried in a continuously advancing straight line path.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
52.16, for a signature gathering line.  
58.29, for a sheet gathering line.
- 52.3 Rotating saddle:**  
This subclass is indented under subclass 52.26. Subject matter wherein the signatures are transported on a surface that turns about an axis in an arc of a circle.
- 56** With means for preventing the operation of the machine.
- 58.01 Sheet associating:**  
This subclass is indented under subclass 52.01. Subject matter wherein a plurality of materials in strip form having definite lengths and widths are brought together or assembled into a pack in a logical array other than by merely stacking the strip materials, in accordance with (a) the recognizable indicia on the materials, or (b) the characteristics distinguishing one strip material from another in the pack.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
12+, for sheet associating with printing  
45+, for sheet associating and folding  
52.01+, for sheets or webs associating or dis-associating.  
52.07+, for web associating.
- 58.02 Sheet arrival sensor:**  
This subclass is indented under subclass 58.01. Subject matter including means for (a) detecting the presence or absence of the sheets, or (b) detecting an orientation of the individual sheet, or (c) recognizing and interpreting the distinguishing markings or specific codes or such visible or invisible markings on the sheet; and
- in response thereto actuating a signal or warning device.
- 58.03 Misfeed sheet sensor:**  
This subclass is indented under subclass 58.02. Subject matter wherein the sensor is detecting (a) the absence of the sheet, or (b) more than one sheet occupying a space at the same time, or (c) a mis-alignment of the sheet, or (d) such improperly supplied sheet; and in response thereto actuating a signal or warning device.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
52.15, for a misfeed signature sensor.
- 58.04 With dissimilar-sheets sensor (e.g., different sizes or weights):**  
This subclass is indented under subclass 58.01. Subject matter including means for detecting different sizes or colors or thicknesses or weights or the like characteristics of the sheets in the pack.
- 58.05 Cover sheet:**  
This subclass is indented under subclass 58.04. Subject matter including a special outermost sheet in the pack having a characteristic different from all other sheets in the pack.
- SEE OR SEARCH CLASS:  
53, Package Making, subclasses 505+ for a detecting means responsive to presence or absence of a cover material.
- 58.06 Envelope stuffing:**  
This subclass is indented under subclass 58.01. Subject matter wherein the sheets are inserted into a container made of a thin prefolded flat sheet.
- SEE OR SEARCH CLASS:  
53, Package Making, subclass 381.7 for a means to open a flap of an envelope.
- 58.07 Performing operation on stacks (e.g., binding, cutting):**  
This subclass is indented under subclass 58.01. Subject matter wherein the pack is undergoing a work (e.g., binding or cutting or aligning or such similar work).

**58.08 Binding:**

This subclass is indented under subclass 58.07. Subject matter wherein two or more sheets in the pack are secured together by a securing means.

- (1) Note. The securing means for this subclass includes metallic rings or wire bands such as staples or threads.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 37+, for stapling and stitching for an assembled and folded sheet material.  
52.18, for signature binding.

SEE OR SEARCH CLASS:

- 29, Metal Working, subclasses 432+ for a residual method of securing a nail or staple to work by driving.  
53, Package Making, subclass 157 for machines to form group contents and to subsequently package the group, at least one article of the group being an insert or separating sheet.  
227, Elongated-Member-Driving Apparatus, subclasses 19+ and subclasses 99+ for combined apparatus for feeding work and applying a member, e.g., staple to the work.  
399, Electrophotography, subclass 410 for stapling the sheets supplied from a copying machine.

**58.09 Including condition responsive control (e.g., stack thickness):**

This subclass is indented under subclass 58.08. Subject matter including a sensor for detecting an occurrence of a predetermined event related to the binding operation such as detecting a specific thickness of a pile of sheets or such similar event and initiating a signal or alarm or actuating a device to regulate or modify the binding operation.

- (1) Note. The size of the staple or the force applied to the staple for binding is directly related to the thickness of the pile.

**58.1 Lapstream:**

This subclass is indented under subclass 58.08. Subject matter comprising a plurality of packs and wherein the packs are carried in a steady flow or succession in an overlapped or shingled arrangement for binding operation.

**58.11 Including stack presentation:**

This subclass is indented under subclass 58.08. Subject matter comprising a receiver and wherein the pack is formed by (a) the sheets being collected in a stack in the receiver and (b) the receiver carrying the stack to a position for binding.

- (1) Note. The binding means in this subclass may or may not be rigidly fixed at one location.  
(2) Note. The stack of sheets in this subclass may be prepared at a location different from the binding operation.

SEE OR SEARCH CLASS:

- 399, Electrophotography, subclasses 408+ for delivering photocopying documents for binding.

**58.12 With edge aligner:**

This subclass is indented under subclass 58.11. Subject matter including means for positioning or locating lateral edges of the sheets (a) with respect to the edges of the previously positioned sheets, or (b) with respect to a part of the transporting mechanism.

- (1) Note. The edge alignment caused by dropping or sliding the sheets by a gravity, such as falling of sheets from a sloped surface, is not included in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 30.07, for an edge aligner in reciprocating-carriage pilers.  
52.08, for an aligning or registering of web.

SEE OR SEARCH CLASS:

- 271, Sheet Feeding or Delivering, subclasses 226+ for a sheet aligning means.

**58.13 With vertically movable stacker:**

This subclass is indented under subclass 58.11. Subject matter wherein the receiver carrying the pack is adjustable in an upward or downward direction.

SEE OR SEARCH THIS CLASS, SUBCLASS:

58.28, for a vertically movable stacker for a sheet associating.

**58.14 Plural stackers:**

This subclass is indented under subclass 58.07. Subject matter comprising at least two additional receivers (i.e., stackers) and wherein the sheets are bound in packs and the packs are delivered to the additional receivers.

SEE OR SEARCH CLASS:

271, Sheet Feeding or Delivering, subclasses 287+ for delivering successive sheets at plural receivers in succession.

**58.15 Means to spread apart stackers:**

This subclass is indented under subclass 58.14. Subject matter including a device for increasing a spacing between the individual stackers.

SEE OR SEARCH CLASS:

271, Sheet Feeding or Delivering, subclass 293 for a means to increase the spacing between the sheet receivers.

**58.16 With edge aligner:**

This subclass is indented under subclass 58.14. Subject matter including means for positioning or locating lateral edges of the sheets (a) with respect to the edges of the previously positioned sheets, or (b) with respect to a part of one of the stackers.

(1) Note. The edge alignment caused by dropping or sliding the sheets by gravity, such as falling of the sheets from a sloped surface, is not included in this subclass.

**58.17 With edge aligner:**

This subclass is indented under subclass 58.07. Subject matter including an operation mechanism and means for positioning or locating lateral edges of the sheets (a) with respect to the

edges of the previously positioned sheets, or (b) with respect to a part of the operation mechanism.

(1) Note. The edge alignment caused by dropping or sliding the sheet by a gravity such as falling of the sheet from a sloped surface is not included in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

58.14+, and 58.17, for aligning the stacked sheets.

**58.18 Plural stackers:**

This subclass is indented under subclass 58.01. Subject matter comprising at least two receivers wherein each receiver receives a pack of sheets.

SEE OR SEARCH CLASS:

271, Sheet Feeding or Delivering, subclasses 287+ for delivering successive sheets from plural receivers in succession.

**58.19 Movable stackers:**

This subclass is indented under subclass 58.18. Subject matter including means for adjusting the positions of the stackers individually or simultaneously as a unit for collecting the packs of sheets.

SEE OR SEARCH CLASS:

271, Sheet Feeding or Delivering, subclasses 292+ for delivering sheets from multiple discharge to movable plural receivers.

**58.2 With hopper:**

This subclass is indented under subclass 58.18. Subject matter wherein the receivers are transported in a carrier which is substantially shaped like a funnel.

**58.21 Radially arranged:**

This subclass is indented under subclass 58.2. Subject matter wherein the hopper is assembled to rotate about a horizontal axis.

**58.22 Annularly arranged:**

This subclass is indented under subclass 58.2. Subject matter wherein the hopper is assembled to rotate about a vertical axis.

**58.23 Sheets received from plural supplies:**

This subclass is indented under subclass 58.01. Subject matter comprising two or more sources of sheets wherein the sources supply the sheets for assembling into the pack.

**SEE OR SEARCH CLASS:**

271, Sheet Feeding or Delivering, subclasses 9.01+ for feeding the sheets from the plural sources.

**58.24 By suction:**

This subclass is indented under subclass 58.23. Subject matter wherein at least one of the supply sources includes an element having a surface, through the surface of which element a vacuum or subatmospheric pressure is applied to facilitate in engaging and pulling the sheets to the surface of the element to remove the sheets from the supply.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

52.24, and 52.28, for opening the signature by suction.

**58.25 By simultaneous feeding:**

This subclass is indented under subclass 58.23. Subject matter wherein the sheets from the plural sources are supplied at the same time.

**58.26 Pusher for sequentially piling sheets:**

This subclass is indented under subclass 58.23. Subject matter including means for contacting each sheet and introducing a force or pressure for collecting the sheets together in a specific order.

**58.27 With edge aligner:**

This subclass is indented under subclass 58.01. Subject matter including means for positioning or locating lateral edges of the sheets (a) with respect to the edges of the previously positioned sheets, or (b) with respect to a part of the sheet associating mechanism.

- (1) Note. The edge alignment caused by dropping or sliding the sheet by gravity

such as falling of the sheet from a sloped surface is not included in this subclass.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 58.12, for an edge aligner associated with a stack-binding operation.  
58.16, for the edge aligner associated with plural stackers of the sheets being operated on.  
58.17, for the edge aligner associated with performing the operation on the stack of sheets.

**58.28 Vertically movable stacker:**

This subclass is indented under subclass 58.01. Subject matter including a receiver for the pack of sheets and wherein the receiver is adjustable in an upward or downward direction.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 58.13, for a vertically movable stacker for a stack binding operation.

**58.29 Gathering line:**

This subclass is indented under subclass 58.01. Subject matter including means for continuously advancing the sheets in a straight line path.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 52.16, for a signature gathering line.  
52.29, for a saddle gathering line.

**58.3 With lapstream:**

This subclass is indented under subclass 58.01. Subject matter wherein the associated sheets are transported in a steady flow or succession in an overlapped or shingled arrangement.

**58.31 Inserting marker sheet:**

This subclass is indented under subclass 58.01. Subject matter including placing a sheet having a distinct characteristic at a predetermined location into a group of sheets, for designating an end of one group of sheets and a beginning of another group of sheets.

**SEE OR SEARCH CLASS:**

- 118, Coating Apparatus, appropriate subclass for means for placing a number

- of sheets into a columnar grouping with means for coating the edge, of a sheet to designate the end of one and the beginning of another grouping.
- 198, Conveyors, Power-Driven, appropriate subclass for placing a number of sheets into a continuously conveyed grouping of sheets on edge, without insertion of a marker sheet.
- 414, Material or Article Handling, subclasses 788.1+ for placing a number of sheets into a stacked grouping, without insertion of a marker sheet; and subclasses 798.2+ for placing a number of sheets into the grouping of sheets on edge, at a fixed location, without insertion of the marker sheet.
- 427, Coating Processes, appropriate subclass for a method of placing a number of sheets into a columnar grouping with coating the edge of a sheet to designate the end of one and the beginning of another grouping.

**59** Having means to cause one sheet to pause until the arrival of another sheet, with which it is associated.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

46, for a means causing a sheet to pause during associating and folding.

**60** There being a cylinder for carrying a sheet around and associating it with a succeeding sheet from the same source.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

6+, 10+, 13+, 19, 38, 42, 43+, and subclasses 47+ for a cylinder carrying a sheet around and associating the sheet with a succeeding sheet from the same source.

END

**58.32 Tab or strip:**

This subclass is indented under subclass 58.31. Subject matter wherein the marker sheet includes a short flap or a narrow piece of a sheet material having a reasonably constant width or such similar short piece of the sheet material.

**58.33 Sheet disassociating:**

This subclass is indented under subclass 52.01. Subject matter wherein (a) a sheet is cut or separated along previously determined locations or weak planes or perforations, into smaller individual sheets to form a stack of individual sheets, or (b) a stack of sheets is cut or separated along the previously determined locations or weak planes or perforations to form a plurality of smaller individual stacks.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

52.01+, for sheets or webs associating or disassociating.

58.01+, for sheet associating

**58.34 Separate stackers:**

This subclass is indented under subclass 58.33. Subject matter comprising at least two receivers and wherein each receiver collects a stack of sheets.